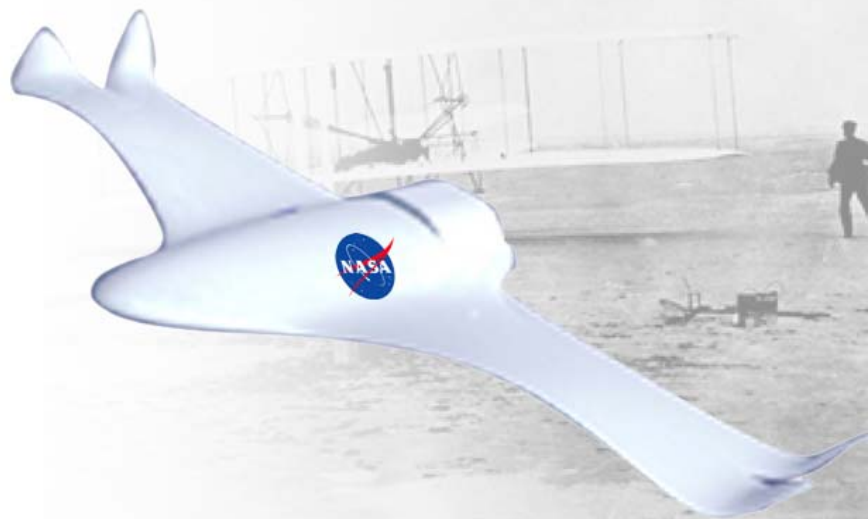


The Full Cost Initiative

Full Cost principles, practices, and the state of implementation

"I think it an object of great importance...To simplify our system of finance...the whole system [has been] involved in impenetrable fog...we might hope to see the finances of the Union as clear and intelligible as a merchant's books, so that every member of Congress, and every man of any mind in the Union, should be able to comprehend them to investigate abuses, and consequently to control them."

Thomas Jefferson,



October 25, 2002

This paper summarizes the Agency full cost initiative and the current state of implementation at NASA, Langley Research Center (LaRC). The full cost initiative is designed to enhance cost-effective mission performance by modifying the way NASA does business so that managers are provided with better information to support decision-making. In its simplest terms, the full cost initiative ties all costs (including civil service personnel costs) to programs/projects. Under full cost, there are no “free” resources. All resources are associated with benefiting programs/projects. Currently, the Agency is scheduled to implement the full cost initiative on October 1, 2003 for the Fiscal Year (FY) 2004 Budget.

Objective

NASA’s full cost initiative is designed to improve the way NASA achieves its mission by implementing new, improved management, budgeting, and accounting policies, practices, and procedures. These new full cost practices are designed to provide timely, accurate estimates and actual cost information on the services and support activities required to achieve cost efficient administrative and program mission performance. The use of full cost management, budgeting, and accounting does not, in and of itself, change the infrastructure; rather, it more clearly discloses infrastructure costs, and their relationship to projects, while facilitating the decision-making process. LaRC currently integrates significant full cost concepts and practices into formulating the Center’s future financial plan or budget. However, while similar integration of full cost accounting and management practices are expected in the future, such practices will not be fully operational until related financial systems and timely detailed information and processes are made available over the next couple of years. Additional information on the status of Agency systems can be found at <http://ifmp.larc.nasa.gov/news/index.cfm>

Overview

The full cost concept ties all Agency costs (including civil service personnel costs) to major activities. These major activities, or final cost objects, within NASA are Agency programs/projects. As previously mentioned, there are no “free” resources; all costs are assigned to benefiting programs/projects. NASA plans to manage, budget, and account for costs on a project basis. NASA is continuing to refine the anticipated activities that will be considered “projects” for full cost budgeting, management, and accounting purposes. Approximately 50 LaRC activities have been identified as full cost projects in the FY 2004 NASA budget request. Examples of LaRC full cost projects include the Twenty-first Century Aircraft Technology (TCAT) project within the Vehicle System Technology Program and the Vehicle Safety Technology project within the Aviation Safety Program. In contrast to the current approach in which civil service personnel costs and certain other costs of an infrastructure/institutional nature are not tied to projects, under the full cost approach all costs will be associated with projects.

Cost Categories

While costs may be categorized in many ways, NASA has separated costs into three major categories. Agency costs will be separated into these three categories: Direct, Service, and G&A.

$$\text{Full cost} = \text{Direct Cost} + \text{Service Cost} + \text{G\&A Cost}$$

Direct costs are those costs that are obviously and/or physically identified to a project at the time they are incurred and are subject to the control and/or influence of the project manager. Such costs include Contractor-supplied hardware, and project labor (civil service or contractor).

Service costs are those costs that cannot be specifically and immediately identified to a project, but can subsequently be related, traced or linked to a project and are assigned based on usage or consumption. Such costs include Facilities and Related services, Information Technology services, and Wind Tunnel services. Sometimes, various terms are used synonymously in the Agency to describe Center services. Such terms include service activities, service pools, and infrastructure. In general, LaRC refers to the described services as service activities.

General & Administrative (G&A) costs are those costs (Center and Corporate) that cannot be obviously or physically identified, traced or linked to a specific project but benefit all projects/activities and are allocated to a project based on a reasonable and consistent basis. The Agency has adopted two different

methodologies for allocating Corporate and Center G&A due to the nature of these costs. Corporate G&A will be allocated to programs/projects based on direct costs, while Center G&A will be allocated based on direct workforce. Examples of Center G&A costs include the costs associated with Financial Management, Procurement, and Security. While such G&A activities can and should be provided as services to customers, typically such activities are referred to as support.

$$\text{Center G\&A rate*} = \frac{\text{Total G\&A Cost}}{\text{Total Project Direct Labor (civil service and contractor)}}$$

*Cost per Full Time Equivalent (FTE)

Corporate G&A: Non-direct, non-service, non-Center G&A costs that occurs. Applied to projects at the Agency-level based on direct costs.

Mandate

The Federal Financial Management Improvement Act of 1996 mandated full cost practices for all Federal agencies. The law stated:

“The purposes of this Act are to...require Federal financial management systems to support full disclosure of Federal financial data, including the full costs of Federal programs and activities, to the citizens, the Congress, and President, and agency management, so that programs and activities can be considered based on their full costs and merits...”

Funding

The appropriation structure of the Agency provides the legal framework/authority to budget, expend, and account for the funding authorized to the Agency by Congress. Over the past few years, the appropriation structure in the Agency has evolved to support the implementation of full cost practices. Specifically, NASA has retained the Science, Aeronautics and Technology (SAT) and Human Space Flight (HSF) appropriations and has eliminated the mission support appropriation, which funded salaries/benefits, travel, research operations support, and construction of facilities. (NASA plans to continue to obtain a separate small appropriation for the independent NASA Office of Inspector General activities.)

Even with the elimination of the mission support appropriation, budgets for salaries, travel and other items continue to be separately identified and accounted for outside of the program/project budgets. Currently, LaRC receives different types of funding and separate appropriations as indicated in the table below. Gross Research and Development (R&D) funding supports the basic research efforts of the Center. Research & Program Management (R&PM) supports the basic costs of civil service personnel – salaries/benefits and travel. Research Operations Support (ROS) supports the business management functions, and other basic Center operations such as fire services and security. Construction of Facilities (CoF) supports the construction and/or major rehabilitation of Center facilities.

Type of Funding

Appropriation from Congress

Research & Development (Gross R&D)	Science, Aerospace, and Technology (SAT) Human Space Flight (HSF)
Research & Program Management Salaries/Benefits and related personnel costs Travel	(Old Mission Support) – currently identified separately under both SAT and HSF
Research Operations Support (ROS)	(Old Mission Support) – currently identified separately under both SAT and HSF

Construction of Facilities (CoF)

(Old Mission Support) – currently identified separately under both SAT and HSF

Under the full cost concept, civil service personnel salaries/benefits and related costs, travel, research operation support (ROS), and construction of facilities (CoF) will be added to the project R&D budgets in the existing SAT and HSF appropriations. Additionally, the Agency plans to pursue a single appropriation structure for future year budget planning. In short, program/project managers will have to plan and manage the direct civil service labor that is required to accomplish their project, which is different than the current workforce approach. The sample below reflects the change in how funding will be budgeted under the Full Cost concept.

Langley FY 04 Full Cost Budget (\$ in millions)

<u>Current Budget</u>		<u>Full Cost Budget</u>	
Net R&D	302	Direct	473
		Net R&D	302
		Direct Sal/Ben	143
		Direct Travel	3
		MS CoF	25
Service Bill	128	Service	136
Services	113	Service Bill	92
Reserve/I&RD	15	Service Sal/Ben	44
R&PM	248	Center G&A	119
Salaries/Benefits	242	ROS services	25
Travel	6	Support services (service bill)	7
		Services to G&A	14
ROS	25	Reserve/IR&D	15
MS CoF	25	G&A Sal/Ben	55
		G&A Travel	3
Total	<u>728</u>	Total	<u>728</u>

Service Activities

LaRC operates seven Service Activities (SA), each having a Service Manager. The following is a list of Service Activities at Langley and the basis for cost assignment for each:

<u>Service</u>	<u>Basis for cost assignment</u>
Wind Tunnels	Shift usage by facility
Simulators and Aircraft	Usage of simulators and research aircraft
Fabrication	Fabrication hours
Science and Engineering	Scientists & Engineers by competency (civil service and contractor), also includes S&M facilities
Information Technology	Seats, connections, licenses, etc.
Publishing	Total direct workforce (civil service and contractor)
Facility and Related Services	Square footage, historical/planned consumption

While estimates provide the initial basis for cost assignment, LaRC typically updates for actual activity during the operating year. Updates adjust for significant differences between planned and actual use.

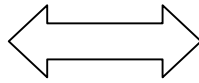
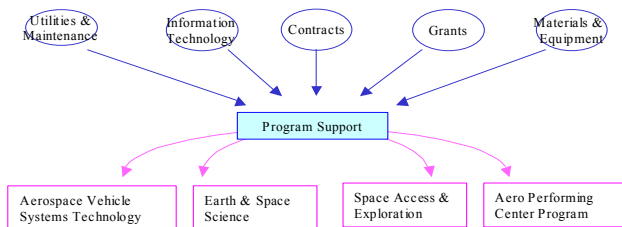
Program Support/Services

Pursuant to the ongoing evolution of LaRC full cost practices, the old “Program Support” terminology and practices have been changed to more accurately reflect evolving LaRC business concepts and practices. Such practice changes are required to help ensure LaRC’s future as one of the Nation’s premier aerospace research and development (R&D) organizations. Affordable, consumption-based, cost efficient **services to customers** are replacing the old perceived paradigm of Program Support “taxes”. Consequently, the new terms **service** activity and G&A support are being used as a more accurate description of current practices.

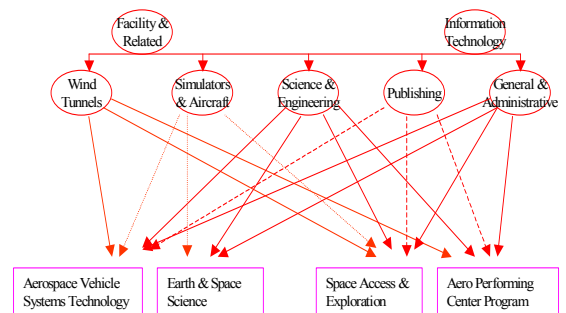
Under the old “program support” approach, programs paid for general support based on estimated workforce, not consumption. As a consequence, some people perceived program support was a general tax on gross R&D funds/workforce. The new “service activity and G&A” practices follow full cost principles, and are designed to ensure that services are established based on program/project customer requirements and that such customers pay for the services they consume.

The following diagrams highlight the Center’s old and new approaches to support/services.

Program Support (Old)



Service Activities and G&A (New)



The key differences between the two approaches are the linkage between the services and the customers and the integration of civil service labor costs. In the “old” program support approach, no clearly identifiable link exists between the support being provided, such as utilities, materials and equipment, and the customer. Programs paid for support costs as a lump sum based on estimated workforce use whether they used the specific support or not. In contrast, in the “new” approach a clear link is being established between the service and the customer. Program customer’s pay for service activity costs, including civil service labor costs, based on estimated use (with subsequent actual usage updates) of specific services and receives an allocation of G&A support based on total direct workforce.

Benefits of the full cost initiative

A number of benefits can be expected from the use of full cost information. These benefits include:

- Improved, cost effective, mission performance, through the use of better information for plans, decisions, and disclosure;
- Strengthened ties between NASA’s missions, programs/projects, and budget requests;
- Maximum program content within constrained budgets;
- Effective tool for program/project managers to better manage;
- Consistency and compliance with sound business practice;

- Compliance with recent legislation and administrative guidance, including the 1990 Chief Financial Officers Act, 1993 Government Performance and Results Act, Federal Financial Management Improvement Act of 1996 and the 2001 President's Management Agenda.

Questions & Answers

What is full cost?

The concept of full cost ties all Agency costs, including Civil Service personnel costs and certain other costs of an institutional nature to major activities (referred to as projects at NASA.)

What is the purpose of full cost?

The overall objective of the full cost initiative is to enhance cost-effective mission performance by modifying the way NASA does business so that managers are provided with information, which supports better plans and decisions.

How will full cost benefit the Agency/Center?

The full cost initiative will associate all costs with programs/projects enabling managers to have better information to support the decision making process.

When will the full cost initiative be implemented at LaRC?

The full cost initiative will be fully implemented at the beginning of FY 2004 (October 2003). LaRC has been operating in a full cost 'lite' mode for the past 3 years. The full cost 'lite' approach means that full cost principles have been in place at the Center, however; the civil service personnel costs have not been included in the program budgets. Under the full cost initiative, all costs (including civil service personnel) will be associated with programs/projects.

How will costs be categorized under the full cost approach?

NASA's full cost approach will separate costs into three categories: Direct Costs, Service Costs, and General and Administrative (G&A) Costs. The full cost of a project is the sum of all direct costs, service costs, and G&A costs associated with the project.

What is a cost pool?

A cost pool is an accumulation of similar costs and cost types that are distributed to projects by an assignment or allocation methodology that best links the costs with the customer's served/supported. Cost pools will be used in the new IFM system for service activities and G&A costs.

What are Center services?

Center services are activities that the Center provides to support employees and programs that operate at Langley Research Center (LaRC). Services include all Center provided activities required to maintain the Center and meet mission objectives and milestones. Services include activities such as Facility and Related Services, Wind Tunnel Services and Information Technology Services.

Who receives these services?

Center employees, on-site contractors, and visitors receive a variety of basic Center services, such as Facilities and Related Services. Certain program customers also receive other more specialized services such as Wind Tunnel Services.

Who manages the services?

Each Center service is managed by a LaRC civil servant who oversees the operations, costs, and bills associated with the service.

Who pays for the services?

Customers or users of the services pay the costs of the services. These users may include programs, projects, organizations, as well as external customers.

How do customers pay for services?

Programs pay for services based on estimated use of services identified during the budget process. Each service provides a specific unit of consumption. LaRC uses special financial accounts, called carrier accounts, to fund, capture and distribute service costs to programs (customers). LaRC typically updates estimated service information with actual service use during the operating year and in related service cost distributions.

How much do LaRC services cost?

The cost of LaRC services are based on the full cost of the service, currently excluding the civil service labor costs. For example, the Wind Tunnel Service in the 14X22 Tunnel cost about \$24,620/day, the Information Technology Service of a new computer "seat" (a GP1-PC) costs about \$2,022, and the Science & Engineering Service cost for the use of labor in the Atmospheric Competency is about \$10,094/FTE (civil service or contractor). Civil service labor costs are being added during FY 2004.

When are customers billed for services?

Customers are alerted to the anticipated bills for services based on customer requirements during the annual budget formulation process. The actual bills are distributed prior to the beginning of the Fiscal Year and typically updated during the year for major changes between estimated and actual use.

Are service bills ever updated for requirement changes?

Yes. Service bills are typically updated in the winter or spring to accommodate requirement changes.

Why do the services cost so much?

LaRC is a world-class high technology Research and Development (R&D) Center with unique capabilities. The costs of Center services are commensurate with LaRC's mission requirements.

Who determines the scope, size and costs of Center services?

Customers, service providers and LaRC senior management, including the Center Strategic Quality Management Council (SQMC), determine the scope, size, content and cost of the services at LaRC.

Why can't programs and projects obtain required services somewhere else?

LaRC must provide certain basic services to remain a premier R&D organization and to achieve Agency missions. Programs are required to obtain certain services through the Center rather than elsewhere to achieve Agency, Center and program security, safety, quality and economic imperatives.

What is the future for Center services and cost practices?

In the next few years, LaRC plans to improve the systems used to collect and distribute service costs. LaRC plans to directly charge net program research accounts for consumed services. The Integrated Financial Management Program (IFMP) System (scheduled for LaRC implementation in 2003) is also expected to provide timely, reliable financial information and subsequently to support full cost practices, including related labor costs.

Additional information can be found on the OCFO website at <http://ocfo.larc.nasa.gov/>.

Sources of information:

Full Cost Initiative Agencywide Implementation Guide, February 1999
Langley Office of the Chief Financial Officer